Background of the problem
Treatment compliance with regular biologics infusion is important to ensure optimal treatment response and to minimize secondary loss of response. However, patients often miss or delay their scheduled infusion. An internal audit that was done over the last 1 year has observed as many as 21% of patients did not attend their regular scheduled infusion.

Mission Statement
To reduce the non-compliance rate of biologic infusion for patients with Inflammatory Bowel Disease (IBD) to less than 15%.

Analysis of problem
The primary goal is to optimize patients’ compliance and reduce the non compliance rate of patients with IBD who receive biologic infusion from 21% to less than 15%. The diagram shows the initial workflow for biologic infusion scheduling:

- Several factors in the workflow contributes to the delay in infusion regime

**Method:**
The possible cause of non-compliance were analyzed using the cause and effect diagram. Kaizen methodology was introduced to further focus on the cause of non-compliance. Infusion scheduling and communication were identified as the key causes of patients’ non-compliance.

**Interventions / Initiatives**
1. Planned infusion dates are keyed into the outpatient administrative system (OAS) for easy tracking and referencing. Automated SMS reminders are sent to patients one week before the infusion appointment.
2. Infusion appointments are made at least 3 months in advance by an IBD nurse / physician so that patients are able to fit in their treatment regime. The outpatient chemotherapy order form has been replaced with the treatment record form.

**Results**
There is a decrease in the non-compliance percentage rate over the period of 6 months from 21% (year 2017 to 6%) (year 2018). The rate of non-compliance was mainly due to the inefficient infusion scheduling workflow and communication between patient and the healthcare team.

- After implementing the improved biologic scheduling workflow and regime, there is a significant decrease in non-compliance percentage as seen in the graph (Figure 1).

- The estimated cost saving over 1 year amount to $19,417.60 (Figure 2)

**Sustainability Plans**
6 monthly statistics are collected and reviewed to ensure the sustainability of the project. It is hoped to promote and increase the number of nurse coordinators to further enhance patients’ compliance rate.

**Conclusion**
The implementation of the revised infusion scheduling workflow has successfully decreased the non compliance rate from 21% to 4% (year 2018). Currently, the automated short message service (SMS) reminder and online outpatient administrative system (OAS) appointments booking allows patients to keep track of their appointments conveniently. The OAS helps to ensure continuity of patients’ treatment as it enables the healthcare workers to track and monitor the infusion schedules and regimes. The introduction of the new workflow has improved better treatment response and patient outcome. The positive outcome of this project has created a spine for the team to start another quality improvement project to further shorten the infusion duration, aiming to improve the utilization of the limited infusion clinic resources and the development of IBD education booklet which is available from May 2019.